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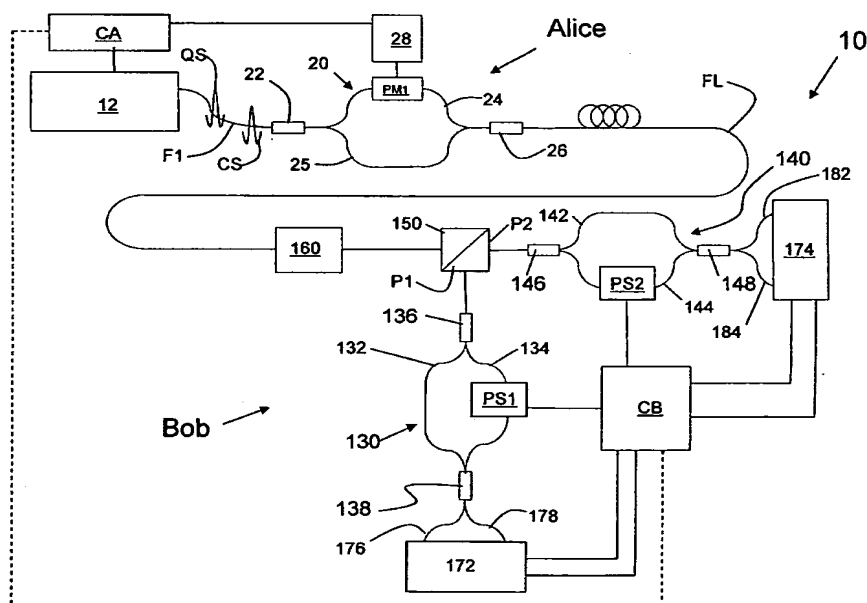
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[Continued on next page]

**(54) Title:** ACTIVE STABILIZATION OF A ONE-WAY QKD SYSTEM



**(S7) Abstract:** A one-way stabilized QKD system (10) that utilizes a control signal (CS) and a quantum signal (QS) that travel the same path through the system from a first QKD station (Alice) to a second QKD station (Bob). The control signal is detected at Bob and used to stabilize Bob's side of the interferometer against phase variations. The system also includes a polarization control stage (200) that controls (e.g., scrambles) the polarization of the photons entering Bob. The combination of the polarization control and the active phase stabilization of the interferometer at Bob's end allows for the stable operation of the interferometer when used as part of a one-way QKD system.

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